

We claim:

1. A shielded assembly comprised of a substrate and, disposed above said substrate, a shield, wherein said shield is comprised of a nanomagnetic material wherein said nanomagnetic material has a saturation magnetization  
5 of from about 1 to about 36,000 Gauss, a coercive force of from about 0.01 to about 5000 Oersteds, a relative magnetic permeability of from about 1 to about 500,000, and an average particle size of less than about 200 nanometers.
2. The shielded assembly as recited in claim 1 wherein said shield is comprised  
10 of a first layer comprising said nanomagnetic material and a second layer comprised of a second material with an electrical resistivity of from about 1 microohm-centimeter to about  $1 \times 10^{25}$  microohm centimeters.
3. The shielded assembly as recited in claim 2, wherein said shield is contiguous with said substrate.
- 15 4. The shielded assembly as recited in claim 3, wherein said second material has a dielectric constant of from about 1.1 to about 10.
5. The shielded assembly as recited in claim 4, wherein said shield is comprised of at least about 35 weight percent of said nanomagnetic material.
6. The shielded assembly as recited in claim 5, wherein said first layer is  
20 disposed between said substrate and said second layer.
7. The shielded assembly as recited in claim 6, wherein said shield has a magnetic shielding factor of at least about 0.5.

8. The shielded assembly as recited in claim 7, wherein said shield has a magnetic shielding factor of at least about 0.9.
9. A shielded assembly comprised of a substrate and, disposed above said substrate, a shield, wherein said shield is comprised of a nanomagnetic material and a second material with an electrical resistivity of from about 1  
5 microohm-centimeter to about  $1 \times 10^{25}$  microohm centimeters, and wherein said nanomagnetic material has a saturation magnetization of from about 1 to about 36,000 Gauss, a coercive force of from about 0.01 to about 5000 Oersteds, a relative magnetic permeability of from about 1 to about 500,000,  
10 and an average particle size of less than about 200 nanometers.
10. The shielded assembly as recited in claim 9, wherein said shield is comprised of a first layer comprising said nanomagnetic material and a second layer comprised of said second material.
11. The shielded assembly as recited in claim 10, wherein said shield is  
15 contiguous with said substrate.
12. The shielded assembly as recited in claim 11, wherein said second material has a dielectric constant of from about 1.1 to about 10.
13. The shielded assembly as recited in claim 12, wherein said first layer is disposed between said substrate and said second layer.
- 20 14. The shielded assembly as recited in claim 13, wherein said shield is comprised of at least about 35 weight percent of said nanomagnetic material.

15. The shielded assembly as recited in claim 14, wherein said shield is comprised of from about 40 to about 60 weight percent of said second material.

16. The shielded assembly as recited in claim 15, wherein said shield has a  
5 magnetic shielding factor of at least about 0.5.

17. The shielded assembly as recited in claim 16, wherein said second material is selected from the group consisting of silicon dioxide, aluminum nitride, cerium oxide, yttrium dioxide, and mixtures thereof.

18. The shielded assembly as recited in claim 17, wherein said shield has a  
10 magnetic shielding factor of at least about 0.9.

19. A shielded assembly comprised of a substrate and, disposed above said substrate, a nanomagnetic material wherein said nanomagnetic material has a saturation magnetization of from about 1 to about 36,000 Gauss, a coercive force of from about 0.01 to about 5000 Oersteds, a relative magnetic  
15 permeability of from about 1 to about 500,000, and an average particle size of less than about 200 nanometers.

20. The shielded assembly as recited in claim 19, wherein said nanomagnetic material is contiguous with said substrate.